

Stephen Schwartz Wins 2003 Haagen-Smit Award For Outstanding Paper Published in Atmospheric Environment

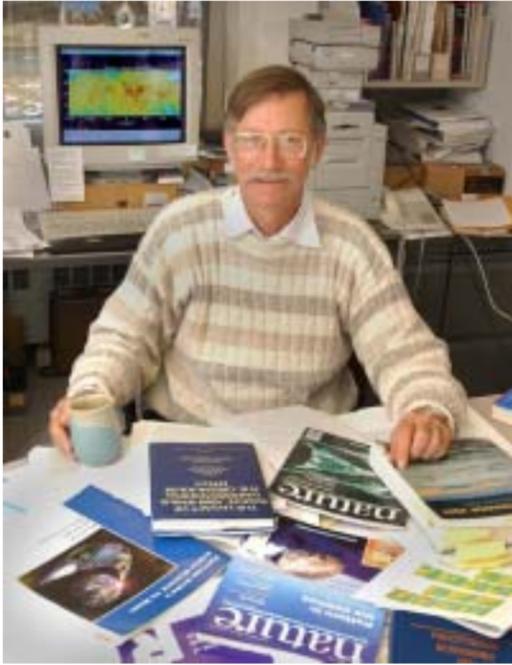
Stephen Schwartz, a senior scientist in the Environmental Sciences Department, was selected as a 2003 winner of the Haagen-Smit Award given by Elsevier, a publisher of scientific, technical and health information.

Named in honor of Arie Jan Haagen-Smit, a pioneer in the field of air pollution and one of the first editors of the *International Journal of Air Pollution*, a predecessor to the journal *Atmospheric Environment (Atmos. Env.)*, the award has been given annually since 2001. Each year, two research papers are selected "to showcase the excellent science that has been published in this distinguished journal and to further attract outstanding future research."

Schwartz won the award with co-author John Freiberg for the 1981 publication, "Mass-transport limitation to the rate of reaction of gases in liquid droplets" (*Atmos. Env.* 15, 1129-1144). The other 2003 winners were Stuart A. Penkett, Brian M.R. Jones, Kenneth A. Brice, and Alan E. Eggleton for the 1979 research paper, "The importance of atmospheric ozone and hydrogen peroxide in oxidizing sulfur dioxide in cloud and rain water" (*Atmos. Env.* 13, 323-337).

At the annual Haagen-Smit Symposium held at Lake Arrowhead, California, each of the awardees will be presented with a plaque and a set of the six-volume *Encyclopedia of Atmospheric Sciences*. Schwartz plans to donate the encyclopedia to BNL's research library.

"I am honored to receive an award bearing the name of



Arie Haagen-Smit," Schwartz said. "The 1981 paper recognized in this award describes one of my earliest studies in atmospheric chemistry, and it still holds a warm spot in my heart. I teamed up with John Freiberg, then at Rutgers University, to identify the component steps of the overall process of uptake and reaction of gases in cloud water. This work turned out to be very timely, as it is invaluable in the treatment of the chemistry of acid rain — one of the defining issues of atmospheric chemistry in the 1980s. I am pleased that even some

20 years later, our paper continues to be used and cited to deal with problems well beyond our initial interest in acid rain."

Schwartz also thanked the Office of Biological & Environmental Research (OBER) in DOE's Office of Science for supporting the research that led to the award-winning paper and for their continued support.

Ari Patrinos, Associate Director of OBER, commented, "This is wonderful news and my heartfelt congratulations to Steve and BNL! It is particularly interesting to me because I was at Brookhaven at the time the paper was published, and I remember it very well."

According to the citation for the award, the paper has been cited over 140 times in scientific literature. The citation says, in part, "At the time of its publication, this article was by far the most thorough and accurate formulation and discussion of the physical and chemical mechanisms governing the interaction of trace gaseous species with atmospheric droplets."

In their award-winning 1981 paper, Schwartz and Freiberg developed a fundamental understanding of the uptake and reaction of sulfur dioxide in cloud drops, a key step in the acid-rain phenomenon.

Now cited in textbooks, this work has been widely used in computer models — including those developed by Schwartz and his BNL colleagues — that simulate the atmospheric trans-

port and transformation of chemicals. These models served as the scientific basis for the Clean Air Act Amendments of 1990 that regulate acid deposition. The theory presented in the paper also has stimulated a large number of laboratory studies that have probed the interaction of gases and liquids.

Schwartz earned a bachelor's degree in chemistry from Harvard University, in 1963, and a Ph.D. in chemistry from the University of California, Berkeley, in 1968. After postdoctoral research at the University of Cambridge, England, he came to Long Island to join the Chemistry Department at Stony Brook University. In 1975, he joined BNL. Schwartz is a Fellow of the American Association of the Advancement of Science.

— Diane Greenberg